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ORIGINAL LECTURES.

ON THE PRINCIPLES WHICH GOVERN THE USE OF ELECTRICITY IN PARALYSIS.

An Abstract of a Course of Three Lectures delivered at the University Hospital

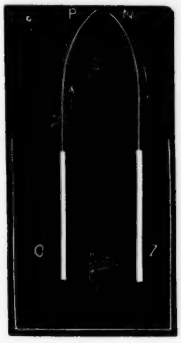
BY H. C. WOOD, JR., M.D.

LECTURE I.

GENTLEMEN,—In opening this winter's course I shall lay aside for a little while purely clinical teaching, in order to give you some instruction upon the principles that underlie the right use of electricity in paralysis; confining my remarks to this especial therapeutic employment of the force, because, beyond this point, medical electro-therapeutics is at present a perfect chaos, a mass of apparently contradictory facts out of which no spirit of man can bring any order until we have better, clearer ideas of the various diseases in which electricity is employed, as well as of the physiological action of galvanism. For a knowledge of these diverse facts you must trust rather to clinical experience than to scientific didactic teaching.

Let us to-day commence at the very bottom of the matter.

Electricity is a force which is developed in various ways, but which is essentially the same entity under all circumstances. When it is obtained by rubbing two surfaces together, it is known as frictional electricity; when by the union of two dissimilar metals, it is called galvanism. Frictional electricity is almost never used in medical practice, and I shall here say nothing more about it.



There are a large number of different patterns or arrangements of the elements which generate galvanism, but the ideal or typical cell may be said to be formed of two dissimilar metals immersed in some corrosive liquid, and connected with each other by a piece of wire externally. Under these circumstances the current starts from the metal most easily corroded, passing through the liquid to that less easily acted upon, and from this over the external wire to the starting-point. The external end of the least-easily corroded plate is therefore always giving off electricity, and is known as the + or positive pole, whilst the corresponding end of the other plate is constantly receiving electricity, and is spoken of as the — or negative pole. When wires are attached to these plates they become, as it were, prolongations of the plates, and their ends constitute the poles. Thus, in the diagram, C = copper, Z = zinc, P and N = poles, and the arrows show the direction of the current.

As the electric current does not primarily exist, it is evident that in the typical or ideal galvanic cell there must be something which sets it in motion. This force is the so-called electro-motor force, and has been determined by physicists to be a definite quantity for the same combination of metals at the one temperature. This force is generated at the point of contact of the metals, and is in consequence of the law discovered by Volta, that when two metals are in contact with each other, a disturbance of the electrical conditions of those metals occurs. The amount and energy of this disturbance vary according to the nature of the metals, and experiments have shown that all metals have definite electro-motor powers or properties, and that they can readily be arranged in a regular series. A study of this series would, however, lead us far astray from the present point. The point which is to be especially borne in mind is the constancy of the electro-motor force, so that in any given combination of metals in a galvanic cell the electro-motor force is always the same, whether the plates of the metal be large or small, whether the solution be an acid, a saline, or pure water. The strength of the current is not, however, decided entirely by the electro-motor force of the cell. Every known substance refuses more or less imperiously to allow the passage of electricity. The best conductors oppose a really very great resistance. Now, it is evident this resistance is opposed to the electro-motor force, and that if it be greater than the latter it will altogether prevent the passage of any current. The strength of the current, then, depends upon the relation between the resistance and the electro-motor force; and we have the celebrated law of Ohm, which may be expressed by the formula $C\,(\text{current strength}) = \frac{E\,(\text{electro-motor force})}{R\,(\text{resistance})}$. This law experiment has shown to be imperative: no increase or diminution of the size of the plates, no change in the character of the solution, affects it.

The resistance to the current in a galvanic combination is a double one: inside of the cell the fluid between the plates opposes the passage of the electricity, and outside of the cell the conductor which completes the circuit also offers a resistance. The reason a battery almost ceases to yield a current when water is substituted for the acid usually employed is not a purely chemical one, but simply because water is an almost complete non-conductor, and offers triumphant resistance to the current, whilst the acid conducts and readily allows the current to pass. The entire resistance (R) is then

made up of two factors: the internal resistance (IR), and the external resistance (ER). The formula of Ohm may therefore be read $C = \frac{E}{IR + ER}$.

As already stated, where the plates of a cell are increased in size the electro-motor force is not increased, but as the surfaces of the plates are increased the diameter of the conductor—*i.e.*, the mass of fluids between the plates—is increased; and consequently, as the resistance in a conductor is inversely as the size of its cross-section, the strength of the current is increased. To make this a little clearer, suppose IR in a certain cell equal 10, then $C = \frac{E}{10 + ER}$; if now the plates of the cell be doubled in size, $C = \frac{E}{\frac{10}{2} + ER} = \frac{E}{5 + ER}$. A similar result—*i.e.*, lessening of the internal resistance—can be achieved by shortening the distance between plates in the cell,—*i.e.*, the length of the conductor,—or by in any way making the intervening liquid a better conductor.

The change in the strength of a current by the increase of the size of the plates of the cells can readily be expressed by the formula of Ohm. If the letters signify as before, and the internal resistance be diminished y times by increasing the size of the plate y times, instead of $C = \frac{E}{IR + ER}$, C will $= \frac{E}{\frac{IR}{y} + ER}$.

If, instead of a single cell, a number of cells are arranged in such a way that the copper of one is connected with the zinc of the next, the electro-motor force of the combination is equal to the sum of the electro-motor forces of the cell: thus, if E = electro-motor force of the single cell, and y = the number of cells, the electro-motor force of the battery will be yE. It is also plain that the internal resistance of the battery is also increased y times, so that the formula of Ohm will stand $C = \frac{yE}{yIR + ER}$.

Of course, the strength of a current is greatly affected by the external resistance. In very many instances the external resistance is very great. Suppose, then, this external resistance in a given case be 1000 times the internal resistance, the formula of Ohm will read, $C = \frac{E}{IR + 1000\,IR}$. It is evident that under these circumstances IR, the internal resistance, becomes very insignificant, and that very little is gained by increasing the size of the plate,—*i.e.*, by diminishing the internal resistance; for if the plates were increased fivefold, the increase of the current strength would only be the difference between $\frac{E}{5IR + 1000\,IR}$ and $\frac{E}{IR + 1000\,IR}$, a difference which is very slight. On the other hand, when the external resistance is very great, everything is gained by increasing the number of cells,—*i.e.*, increasing the electro-motor power; for $\frac{5E}{5IR + 1000\,IR}$ gives a very different result from $\frac{E}{IR + 1000\,IR}$. *When, therefore, the external resistance is many times greater than the internal, practically nothing is gained by increasing the size of the plates; everything by increasing the number of elements.*

The converse of the above reasoning also holds. If the external resistance be very slight, the internal rises in importance. Thus, suppose $ER = \frac{IR}{1000}$. Then the formula would be $C = \frac{E}{IR + \frac{IR}{1000}}$. In this case a great deal is gained by increasing the size of the plates, for $\frac{E}{\frac{IR}{5} + \frac{IR}{1000}}$ gives a very different result from $\frac{E}{IR + \frac{IR}{1000}}$. In such a case, by quintupling the size of the plates the strength of the current is practically increased fivefold. On the other hand, it is plain that when the external resistance is slight, the gain by increasing the number of cells is a slight one, for the internal resistance is increased as many times as the electro-motor force. Thus, if five cells are used, the formula will be $C = \frac{5E}{5IR + \frac{IR}{1000}}$, which will, of course, give practically the same result as $\frac{E}{IR + \frac{IR}{1000}}$.

The law may then be stated to be that when the *external resistance is very slight, increasing the number of the elements has no practical effect upon the strength of the current, whilst an increase of the size of the elements has the greatest effect.*

When there is no very *great disproportion between the internal and the external resistance, it is evident that the strength of the current may be increased either by increasing the size or the number of the elements.* Thus, if ER = IR, $C = \frac{E}{IR + ER} = \frac{E}{IR + IR}$; and increasing the size of the plates fourfold will give the formula $C = \frac{E}{\frac{IR}{4} + IR}$; or increasing the number of elements to four will yield the formula $C = \frac{4E}{4R + R}$. Perhaps the result will be clearer if figures are used. Suppose E = 100, IR = 10, and ER = 10. Then the first formula will be $C = \frac{100}{10 + 10} = 5$; the

second, $C = \frac{100}{\frac{10}{4} + 10} = 8$; the third, $C = \frac{400}{40 + 10} = 8$. When, therefore, the *external and internal resistance are equally balanced, the current strength is equally increased by increasing the number or the size of the plates.* The application of these principles to electro-therapeutics is a very simple one. In the ordinary applications of electricity to the body the resistance of the tissues is enormous—very many times greater than the internal resistance of any battery, and consequently the latter may be totally disregarded. Hence for ordinary purposes the formula stands $C = \frac{E}{ER}$, and power can be gained only by increasing E,—that is, by augmenting the number of cells.

When, however, it is desired to act upon the blood in an aneurismal sac, the needles are brought close to each other; and, moreover, the blood is a comparatively good conductor of the electricity. Hence, in such cases, the external resistance is so much reduced that the internal becomes of such importance that it should not be overlooked. It follows, therefore, that when an aneurism is to be acted upon the plates should be increased in size, whilst at the same time a number of cells should be used.

In the so-called "galvano-cautery" the current is not passed through the body at all, but through a wire, which is thus kept at a white heat. In this case the external resistance is vastly less than when human tissues form a part of the circuit. Hence it becomes a matter of importance to reduce to as great a degree as possible the internal resistance, and the elements or plates should be very large and should be placed very close to one another in the cells. The external resistance is not, however, so slight that it can be entirely overlooked, and hence a number of cells are combined with one another, so as to give sufficient electro-motor force.

You will notice, gentlemen, that I have in my lecture entirely avoided such expressions as quantity and intensity. It would occupy too much space for me to dwell upon the fact that, to use the language of one of the most eminent of living writers, "these terms are remnants of an erroneous theory." It is, however, of the greatest practical importance that they be banished from electro-therapeutics. The amount of mystification which has been produced by talk concerning the therapeutic effects of currents of large quantity with low intensity as contrasted with those of currents of high intensity and low quantity is equalled only by the amount of nonsense which has been written. Currents of galvanism have really only one attribute,—*i.e.*, current strength,—and that is in strict obedience with the law of Ohm.

Again, a dense fog has been thrown around the subject of electro-therapeutics by the idea that there are various essentially different forms of galvanism. As you know, the current which flows from a cell or a combination of cells is spoken of as a *continuous current*, or sometimes as a *primary current;* besides this, modern therapeutists use another series of currents, which are known as the *induced currents.*

The term *primary current* is often applied to one of these induced currents. If we employ the name *continuous current* for that current derived from the galvanic cell, we must continually be speaking of the interrupted continuous current, which certainly is inelegant. I shall, therefore, employ the name *chemical current* or *galvanic current* to designate that form of galvanism which is generated in the galvanic cell.

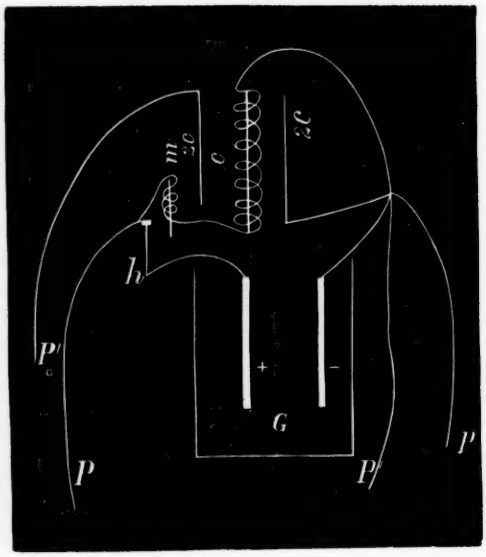
If a coil of insulated wire have a bar of soft iron placed in its centre and be surrounded by an external coil of wire, when a chemical current is passed through the first coil, owing to physical laws which I shall not stop to consider, every time that the galvanic circuit is completed or interrupted a brief current of electricity is induced in the inner or first coil, and also a similar current in the outer or second coil. The only physical facts which it is necessary for us to know are that these induced currents are very brief and of great strength, also that they are to-and-fro currents,—that is, run in opposite directions in each individual coil. Thus, in the inner or first coil, when the galvanic circuit is closed the induced current in the inner coil runs parallel to the generator chemical current, but when this current is broken the induced runs in a contrary direction. In the outer coil the induced current, which is instantaneously developed when the galvanic current is sent through the inner coil, pursues an opposite direction to that of the chemical current; but when the latter is broken, the return induced current in the outer coil runs parallel to the generator current.

As these induced currents run backwards and forwards, to and fro, in this way, it would appear that there could not be any negative or positive pole to the battery which generates them, for if one end or pole of the wire constituting the coil be negative in regard to the first induced current, it must be positive in regard to the second or return current. This is, gentlemen, assuredly true so far as concerns the outer or second coil, but is not true for the inner or first coil, as you will readily understand by means of this diagram of an induction battery.

It is plain that when the current is passing, the hammer h being in the position represented in the diagram, m will become magnetic and attract h. This at once breaks the current, and an induced current runs through the first coil and is received by the patient grasping the handles P P. The instant the current is interrupted, m loses its magnetism and the spring-hammer flies back. Now the circuit is closed, and for the second time an induced current runs through the first coil c. It is evident, however, that this induced current of closure will not pass through the body of the person grasping the handles P P, but will pass along h through the cell to the other end of the coil, as a shorter route and one of vastly less resistance. It is plain that from the inner or first coil the induced current of broken circuit alone passes through the body of the patient.

In regard to the outer coil, it is evident that when

the circuit is closed the momentary induced current must run through the body of him who grasps the handles P′ and P′, and that the return current which passes when the circuit is broken must take the same route.



G Galvanic element, with the + and — metals in it.
c Coil in which the primary induced current or currents of the first coil are generated.
h Spring-hammer or vibrator.
m A piece of soft iron becoming a magnet when the current is passing.
2c Outer coil in which secondary induced current, or current of the second coil, is generated.
P Handles of inner coil.
P′ Handles of outer coil.

It follows from the above considerations that the *current of the first coil* runs through the patient *only in one direction*, and electricians may correctly mark poles + and —; but that the *current of the second coil* runs in *both directions*, so that any designation of its handles as positive and negative is incorrect. The only justification for the marking of the secondary or outer current poles, as is often done, is found in the fact that the induced current of the broken circuit is stronger than that of the closed circuit. Hence it is that with very strong currents you can sometimes distinguish between the two poles when grasped in the hand. The difference is, however, a slight one, and for all practical purposes the induced current of the outer coil is a to-and-fro one, without any negative or positive poles.

If a strong continuous galvanic current be passed through a person, a shock is felt at the moment of making and breaking the circuit, but whilst the current is passing no sensation is perceived except at the points of entrance and exit. Or if the current be passed through the nerve of a muscle, that muscle violently contracts at the moment the circuit is made or broken, but whilst the current is flowing the muscle is quiescent. If an induced or faradic current be passed through a nerve, the muscle supplied by that nerve is thrown into a violent continuous spasm. The reason of this is obvious. The so-called faradic or induced current is, as has already been stated, a succession of instantaneous broken currents for the first coil, and as brief to-and-fro currents for the outer coil; so that the circuit is continually being closed and broken, and the muscle is continually excited to action. There is, therefore, a different result achieved in the application of the continuous and induced currents, not because there is any real difference in their nature, but because the mode of application is diverse.

Most electricians to-day teach that the true galvanic current is very different from the faradic current, and many, like Duchenne, persist in asserting that the currents of the first coil are essentially different from those of the second. Galvanism is, however, galvanism, its nature and attributes probably always the same; the faradic currents are lacking in the chemical power of the continuous current because they pass so quickly that they have not time to exert a chemical influence. You know gunpowder can be passed so quickly through the hottest flame as not to ignite. The secondary induced current differs somewhat in its action from the primary, simply because the latter is not a to-and-fro current, and we cannot readily convert an induced into a galvanic or chemical current, because we cannot readily tie together, as it were, the ends of the brief currents into one. I have myself little doubt that if we could get the interruptions at the rate of many thousand times a minute, we should find that the primary induced current would act as a continuous current.

We can readily, by mechanical means and contrivances, interrupt the continuous current, or even rapidly reverse the poles so as to give a to-and-fro current like that of the outer coil. When this is done, it is impossible to distinguish between the action of the galvanic and that of the faradic current in producing muscular contractions. It is true that in certain diseased states of the muscle it has been asserted, and with apparent reason, that the action of the induced current is essentially different from that of the true galvanic current. Nevertheless, when the matter is closely investigated, these abnormal muscles yield us the most cogent proofs of the identity of the two currents. The consideration of this must, however, be postponed until we are more advanced in our study. Our efforts at our next meeting must be to discover how or why it is that muscular contractions are caused at the making and breaking of circuits.

ORIGINAL COMMUNICATIONS.

HYPÆMIA FOLLOWING THE OPERATION OF DISCISSION.

BY ALBERT G. HEYL, M.D.,
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HYPÆMIA, or a collection of blood in the anterior chamber of the eye, consequent upon the operation of discission when performed through the cornea, is one of those rare occurrences upon which we sometimes stumble in practice, but which,

though curious and unique, are also of great practical interest. The history of the case in which this condition occurred is as follows:

The patient, W. G., a healthy-looking German lad, aged 10 years, was brought to the Eye and Ear Institute June 22, 1874, for an opinion concerning his right eye. Two weeks previously his parents had noticed something wrong about the eye, their attention having been attracted by the white, glistening speck forming the background to the pupillary space, and due to the opaque lens. The previous history indicates that the boy has suffered more than is usual from the diseases of childhood, but apparently with little effect upon his general nutrition. There was no history of injury to the eye. The urine was normal.

On examination of the eyes, the following was noted:

Right eye.—Anterior chamber shallow, pupil moderately dilated. Lens presenting the ordinary appearance of soft cataract; a narrow band of less opaque lens-substance was noticed running across the lens for about two-thirds of the way, then bifurcating and continuing on to the equator of the lens, and marking the line of separation between its segments. Light perception and projection good.

Left eye.—V = $\frac{20}{20}$. Hypermetropia $\frac{1}{37}$ present. Oblique illumination and ophthalmoscope reveal nothing abnormal.

The boy was admitted into the Presbyterian Hospital, and on the 25th of last June the operation of discission was performed by Dr. Strawbridge, with whose permission this case is reported. The needle, as usual, was entered through the outer lower quadrant of the cornea, quite obliquely, however, owing to the very shallow anterior chamber and the capsule ruptured by a single tear. On withdrawal of the needle, we were greatly surprised to see the anterior chamber rapidly fill with blood. The usual after-treatment was observed; the blood was absorbed in about a day; no marked symptoms of irritation supervened. On examination, a few days afterwards, a synechia posterior directly downward was discovered.

The second discission was made July 12; the same phenomenon was observed; all the blood was absorbed in twenty-four hours, with the exception of a small thread-like clot lying in a chink of the partially absorbed lens, and resembling a minute blood-vessel; careful and repeated examination showed, however, that it was merely a clot-shred.

The third discission was made August 13. The hemorrhage again recurred; the blood was seen to ooze out of the iris-tissue at different points, then to coalesce until the anterior chamber was full.

October 20.—Lens seems to be completely absorbed; a large amount of capsule visible, appearing like an empty shell behind the iris and maintained in position by synechial attachments. A large hole exists in the centre of the anterior capsule. V = $\frac{10}{50}$, with convex 4. Ophthalmoscopic examination revealed some vitreous cloudiness, but nothing further, owing to the extreme restlessness of the patient. No opportunity for further examination has been afforded.

The main interest of this case hinges, of course, upon the occurrence of hypæmia evidently resulting from the operation; and the inquiry at once arises as to the source and cause of it.

1. As to its source. Undoubtedly the hemorrhage proceeded from the iris-vessels; the manner in which the blood oozed out of the iris-tissue sufficiently indicates that such was the fact.

At first thought it would be natural to suppose that the lens or its capsule, as the structure most extensively lacerated by the operation, was the seat of the hemorrhage. Arlt* mentions having seen in a few cases blood-vessels developed upon the anterior capsule. Ruete† describes the same thing occurring upon the inner face of the anterior capsule. When, then, these rare pathological conditions are present it would be very possible for hemorrhage to occur from the needle lacerating the vessel-coats. I have within the past year assisted Dr. Strawbridge in operating upon a case of traumatic cataract occurring in private practice, where this very thing occurred. The first three operations, in which the capsule was very lightly divided, were not followed by any event worthy of note. In the fourth operation the capsule was very freely divided, and a slight amount of blood escaped into the pupillary space, barely sufficient to tinge the aqueous humor; no unpleasant symptom followed, and the lens is now so nearly absorbed as probably not to require another operation. In the case before us the hemorrhage was too large to admit of its proceeding from lacerated capsular vessels, and, further, repeated and most careful examination failed to detect a single vessel upon the capsule; so that the blood may safely be considered to have escaped from some other tissue, and doubtless from the iris, as before stated.

2. As to the cause of the hemorrhage. Was it due to the wounding of the iris-vessels by the needle? Most certainly not: this point was carefully watched in the operations succeeding the first, making it certain that some other explanation must be given.

Was it due to escape of aqueous humor and consequent diminution of intra-ocular tension? Adolph Weber‡ has reported a case of hypæmia in which paracentesis corneæ was repeatedly performed, followed in each instance by fresh escape of blood into the anterior chamber. The exciting cause of the hemorrhage in this case of Weber's, to a certain extent, was doubtless the evacuation of the aqueous humor, but in the case before us so little aqueous humor was lost, if, indeed, any escaped, as practically to make this explanation insufficient.

Before giving what I believe to be the true explanation of this case, allow me to call attention to a few points which have a bearing upon it.

1. The origin of this cataract. The youth of the patient, the absence of any history of injury to the eye, the vitreous cloudiness, the absence of morbid change in the left eye, lead to the conclusion that the cataract was the result of inflammatory action involving one or more of the neighboring tunics of the eyeball.

2. An engorged condition of the choroidal veins readily induces hyperæmia of the iris, sometimes so excessive as, upon slightly increased afflux of blood to the part, to cause the escape of blood into the anterior chamber. Such, doubtless, was the explanation of the case of Weber's, in which the patient by the mere act of bending the body forward was able to bring on the hypæmia.

Other cases of this kind might be cited, were it

* Die Krankheiten des Auges, Bd. ii. S. 263.
† Lehrbuch der Ophthalmologie, ad loc.
‡ Archiv für Ophthalmologie, Bd. vii. Abth. i. S. 59.

necessary. Moreover, the interesting researches of Leber* have shown that after ligating the venæ vorticosæ, the principal channels of return for the iris-blood, marked hyperæmia of the choroid and iris sets in, which is followed by extensive infiltration of the tissues by red blood-corpuscles, which appear, in accordance with Cohnheim's views, to have passed through the vessel-walls. On allowing the ligatures to remain a short time, small collections of blood take place upon the iris, ciliary processes, and in the anterior chamber, dependent, probably, on the rupture of vessels of small calibre.

3. The corneal puncture in the operation of discission is followed by an almost instantaneous injection of the conjunctival and sub-conjunctival vessels, lasting generally from one to two days, indicating that the operation, simple though it be, calls forth sufficient irritation to induce an afflux of blood to the part.

Basing, then, the exposition upon these points, I may formulate it as follows: previous to his application to us, an inflammation had occurred, originating very possibly in the choroid, but involving secondarily some of the neighboring structures, with resultant disturbance of the nutrition of the lens and formation of cataract. Further, in consequence of the disturbance of the intra-ocular circulation, an engorged condition of the iris-veins resulted, sufficient upon slight afflux of blood to rupture their coats. This afflux of blood we believe to have been caused by the irritation of the discission.

There remains yet an interesting feature of this case to discuss, viz., the rapidity with which the blood was absorbed: in from twenty-four to thirty hours every trace of it had vanished from the anterior chamber. It is interesting to note the time required for blood-absorption in the anterior chamber in different cases.

Years ago,† Meyer called attention to the fact that in wounds of the eye by which the aqueous humor is totally evacuated and blood occupies its place, the latter will sometimes be absorbed in twenty-four hours.

In cases where the eye has been injured by an impinging missile, which, without penetrating the ball, has yet caused an escape of blood into the anterior chamber, it is not uncommon for it to require days and even weeks for its removal.

I have recently had under observation two cases of this kind. In one the eye was struck by the cork of a mead-bottle, which was driven forcibly out by the accumulated gas. Although the blood in the anterior chamber was small in amount, it required at least five days for its removal.

The other patient was a quarryman, who, while sledging, was struck by a small fragment of stone with such violence that, without penetration of the ball, a large amount of blood was poured out into the anterior chamber, the latter being, when I saw it two days after the accident, two-thirds full. In this case more than two weeks were required for the blood-absorption.

This variation in the time required for the blood-absorption is explained by several circumstances which hardly need be specified. There is time merely to call attention to the most important one of all, viz., the condition of the absorbing vessels as regards this fulness, and the rapidity of the fluid contained within their walls. According to well-known physiological laws, venous absorption is accelerated by increased rapidity of the blood-stream, but retarded, or even stopped, according as the current is slowed or stasis takes place. Practically, we may consider the main absorbents in all these cases to be the vessels about the sclero-corneal circle and the venules of the iris, and particularly the fine net-work of vessels overlying the iris first described by Leber, to whose investigations concerning the vascular systems of the eye we owe so much. Let us then apply this fact to the cases before us. In the case forming the subject of this paper, a passive hyperæmia of the iris dependent upon disturbance of the choroidal circulation was present. The local depletion afforded by the hemorrhage was sufficient for the time being to relieve the embarrassed circulation, and to admit of rapid absorption. In the other cases a violent active hyperæmia was called forth by the injuries, and at the time of application for relief, in one an acute iritis was in full blast, in the other a condition closely bordering upon it. The effect, then, of the hemorrhage was but momentary as regards the condition of the vessels; redistention of the vessels quickly ensued, the blood-current was slowed, and rapid absorption stayed.

The interesting features, then, of this case were the hemorrhage, sufficiently large in amount to fill the anterior chamber, resulting from the operation of discission performed through the cornea, and the rapid absorption of the escaped blood.

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* Archiv für Ophthalmologie, Bd. xix. Abth. ii. S. 145.
† Beiträge zur Augenheilkunde, S. 17, Wien, 1850.

NOTES OF HOSPITAL PRACTICE.

PHILADELPHIA HOSPITAL.

CASE OF MITRAL AND TRICUSPID DISEASE, WITH EMBOLISM.

Reported by Dr. John Guitéras.

During my term as resident physician to the Philadelphia Hospital, I had under my care, in the wards of Dr. William Pepper, the following case, which may prove of interest to the readers of the *Times*.

Mary W., æt. 35, temperate; admitted May 7, 1874. Family is healthy, excepting the mother, who died of heart-disease. The patient has never had rheumatism or syphilis.

Though not a strong woman, she has been working for many years at the sewing-machine, without any other symptoms than occasional slight palpitations of the heart, epistaxis, and frequent bronchial catarrhs. For years she has had an eruption of acne rosacea over the face. She has never had dropsy.

She was working up to three weeks before admission, when she had an attack of hemiplegia, with sudden loss of consciousness, and complete paralysis of the whole left side of the body. Since the attack there has been œdema of the affected side, and, though motion has been gradually returning, she cannot yet help herself at all.

On admission, her expression was anxious. There was difficulty in articulating, and the tongue was protruded towards the left. There was no paralysis of sensation, and the electro-muscular contractility was good. The veins of the hands were distended, and there was almost complete absence of radial pulse. On auscultation we could hear a few distinct beats, followed by a series of such rapid, abortive pulsations that they could not be counted. A mitral murmur and a clacking sound were also detected. She was ordered five drops of tincture of digitalis, with camphor-water and solution of acetate of ammonia every two hours; also nutritious liquid food and stimulants.

May 9.—In the evening the heart became more regular; by ausculting, its pulsations could be counted 130. The murmur was well defined as a double mitral.

May 10, 3 A.M.—She was attacked with a sudden severe aching pain, which, affecting first the right arm, became at last fixed in the right leg. One-quarter of a grain of morphine, administered by the night-nurse, gave no relief. At 6 A.M. the pulse (as determined by auscultation) is 165, and the respirations 30, short and moaning. The temperature in the right axilla is 91⅓°, and 91° in the left (the thermometer was kept in position for fifteen minutes). The face and extremities are cold and purplish. In the right leg the coldness extends up to the groin. This limb feels to her numb and heavy, but motion is not impaired. Her pupils are contracted, and she is drowsy. I gave her immediately an ounce of whisky, a drachm of tincture of digitalis, and half a drachm of the aromatic spirits of ammonia. She was rubbed with dry hot cloths; the limbs were wrapped in cotton, and hot pans were placed under the bed-clothing. She was ordered to take, every hour, five drops of tincture of digitalis, twenty of the solution of ammonia, with a tablespoonful each of solution of the acetate and whisky. Hot beef-tea was also given in abundance, and some milk.

Every symptom pointed to the existence of a clot in the femoral artery, except that in the dorsum of the foot, and for some distance into the femoral triangle, a pulsation was felt, which was quite puzzling.

At 5 P.M., temperature 98°. Pain was so intense that I gave one-quarter of a grain of morphine hypodermically, and she went into a sound sleep, from which she was with difficulty aroused.

At 7 P.M., pulse 150; respiration 12. Extremities are warm, except the right leg. The expirations are prolonged and snoring, and the pupils much contracted. Says that she feels better.

At 11 P.M., respirations have fallen to 9, and they are rattling. But the pulse is 137, and on waking her the respirations become easier, and they increase to 14. Ordered one-sixtieth of a grain of atropine, which was repeated in three hours.

May 11.—At 5 A.M. the digitalis-mixture gave out, and at 9 the pulse is 150, respiration 27. She feels better, and the temperature continues normal.

Evening.—Pulse 150. During the day digitalis has been given in fifteen-drop doses, but she has been vomiting. A turpentine injection was given to relieve tympany; and eighteen ounces of urine were drawn. She was ordered, for the night, injections of whisky and ammonia, with fifteen drops of digitalis every three hours.

May 12.—Pulse 165; respiration 25. There is but little pain. The right leg begins to show scattered patches of ecchymosis. The foot is paralyzed, and the toes are flexed. The pulsation in the veins of the hand noticed yesterday has disappeared. The simultaneous disappearance of all pulsation in the dorsum of the foot, and subsequently in the femoral triangle, makes me believe that the unaccountable pulsation previously felt in these two places was a venous wave.

Evening.—Respiration 24; pulse 150, not yet to be counted at the wrist. A stupe made with six ounces of the infusion of digitalis was placed on the abdomen at noon, and renewed this evening.

May 13.—She is a great deal better. Respiration 18; pulse 137 at the heart, 69 at the wrist. The toes of the right foot commence to shrivel. She takes food well.

Evening.—Pulse 150; respiration 27. Ordered again whisky in tablespoonful doses every three hours. The stupe was renewed morning and evening.

May 14.—Feels very well. The pulse is between 75 and 100, whilst the cardiac contractions number 135 to 140. The stupe was removed, and fifteen drops of tincture of digitalis were given with the whisky.

Evening.—Pulse 117.

May 15.—Pulse 108 at the wrist. It is pretty regular, and of fair volume. The heart beats 117. The dose of digitalis was now reduced to five drops every three hours.

Evening.—Heart beating 162; respiration 36. Œdema of the lungs soon developed, and she died next morning at 10 o'clock. The recent emboli found in the lungs and brain were the immediate cause of this sudden change in the symptoms.

Post-mortem, 2 P.M.—Rigor mortis well marked. Patches of ecchymosis are scattered over the right leg from the lower part of the thigh downwards. The discolored part is cold, whilst the warmth is yet retained above. The toes of the right foot are dry and shrivelled. Higher up we find bullæ and peeling of the epidermis.

Thorax.—The apex of the heart is in the fifth interspace, just outside of the line of the nipple. There is splenization of the lungs posteriorly. The anterior portion of the right lower lobe is the seat of two quite extensive patches of hemorrhagic infarctus, triangular in shape and with the base towards the pleura. They are quite recent; the two emboli not having yet become attached to the walls of the vessels. There is an extensive area of collateral hyperæmia surrounding the infarctus.

Heart.—The pericardium is normal. The viscus is dilated and hypertrophied to a slight extent. The left auricle is very much dilated. The mitral opening is contracted into a narrow funnel, which only admits the tip of the little finger. The leaflets are calcareous and very rigid. Regurgitation is easily demonstrated by the hydrostatic test. On the auricular surface of the posterior leaflet, towards its base, there is a large ulcer, probably atheromatous, as there are no evidences of acute endocarditis. Its surface is covered with a rather firmly attached, friable clot, evidently the origin of the existing systemic emboli. The tricuspid valves were simply glued together along the edges; but they were perfectly flexible, and gave rise to very little obstruction and regurgitation.

The muscular fibres, under the microscope, appeared slightly granular; but the striation was distinct.

Abdomen.—Liver small, and showing nutmeg pigmentation from red atrophy. The kidneys are the seat of congestive nephritis, evidently chronic, as shown by the induration of the tissues. One of them presents a small infarctus, commencing to break down. The right internal iliac artery is occluded by an embolus; and the mucous membrane of the bladder is congested and discolored by numerous punctated hemorrhages.

The femoral artery and its branches, as far down as I can dissect in Scarpa's triangle, are filled with a dark, rather firm clot. The coats of the vessel are discolored, but the clot is only slightly adherent. The anterior tibial at the ankle is empty.

Brain.—An embolus, similar in appearance to the deposit on the endocardial ulcer, is found at the junction of the middle and anterior left cerebral arteries. It must be very recent, as the blood has not yet coagulated about it. On the ventricular surface of the anterior por-

tion of the right corpus striatum is found a cavity about one-half an inch in diameter. It is filled with the rather thick fluid of fatty débris. Probably these are evidences of yellow softening following a condition of red softening.

The urine was highly albuminous, and deficient in urea. It contained rare epithelial casts, and some highly granular. There were also found very few hyaline and hyaline-epithelial casts.

TRANSLATIONS.

A Remarkable Case of Luxation of the Penis (Dr. Moldenhauer: *Berliner Klin. Wochenschrift*, No. 45, 1874).—Luxation of the penis on account of a loose connection between the skin and the corpora cavernosa is an accident which may occur, although it is not often met with. One case is reported by Nélaton, and mentioned by Hyrtl in his work on topographical anatomy. The patient in this case was a boy who was injured by the caving in of an embankment, the skin enveloping the penis being torn from its attachment, thus allowing that organ to slip under the skin of the scrotum. The displaced organ was in this case returned by means of a forceps introduced into the preputial opening.

The case described in this article is still more remarkable, since the penis was torn completely from its enveloping skin and thrust beneath the coverings of the abdomen.

W. K., a strongly-built farmer, aged 57, was injured on the 25th of October, 1867, by falling from his wagon. As he got up, the horse forced him against a tree, and the hind wheel of the wagon passed close in front of his body, and he found that he was severely hurt. Upon examination, it was found that the symphysis, scrotum, and penis were covered with blood, and that the scrotum was much swollen and filled with extravasated blood. There was no fracture of the bones of the pelvis, and no injury of the abdominal organs could be found. The penis, however, was much injured; the glans could not be recognized, and the whole organ hung soft and flaccid as if it had been completely crushed, but it was not very painful upon manual examination. In order to make out the condition of the urethra, an effort was made to introduce a catheter, but without success, for the instrument, after repeated trials, could only be passed as far as the symphysis pubis, where its further progress was arrested. The patient was placed in bed, and compresses, soaked in lead-water, applied to the injured parts. During the night no urine passed from the penis, but it was found that there had been extravasation of that fluid into the scrotum, which was much distended and emitted a urinous odor. As it was now evident that some operative interference was necessary, the patient was placed under the influence of chloroform, a catheter introduced as far as possible into the urethra, and an incision made down upon it through the raphé of the scrotum. The tissues were now dissected away, layer by layer, and careful search made for the urethra, in which the catheter was supposed to lie; but that passage could not be found, and, owing to an attack of hemorrhage of a violent character, further investigation had to be desisted from. On the same evening the patient was quite comfortable, the urine flowed freely from the scrotal wound, and, with the exception of the burning which it occasioned in its passage over the raw surfaces, caused him no annoyance.

On the 30th of October a new effort was made to find the urethra. The first incision was continued up to the root of the penis, and there was found to be beneath the symphysis a cavity filled with ragged tissues and granulations, into which an elastic catheter was thrust to the extent of an inch or two, but no further introduction of the instrument was possible.

On the 6th of November an abscess formed in the abdominal walls, on a level with the spine of the ilium, which was opened the next day, discharging pus very freely, and having a fistula whence much more urine came than from the wound below in the scrotum.

On the 10th of November another unsuccessful search was made for the urethra, and then for the first time the idea arose that this must be looked for in the upper portion of the inguinal region.

A catheter was introduced into the superior opening, which passed down to the opening under the symphysis; and on the 12th an incision was made in the inguinal region, and the penis, deprived of its skin, but in other respects uninjured, was found lying imbedded in the fat and connective tissue covering the muscles of the abdomen. The entire penis had therefore been torn from its cutaneous sheath, and had then slipped up into the inguinal region beneath a portion of the layers composing the parietes of the abdomen. The urethra was uninjured: a catheter could be passed from the meatus through the organ, which had formed adhesions to the abdominal muscles up to the symphysis, where its farther progress was arrested. The glans and prepuce were dissected off, but, at the request of the patient, who stated that he only wished the penis for the function of urination, no further attempt was made to restore the organ to its normal state. That which had been regarded at the time of the injury as the crushed and bruised penis was composed only of the cutaneous envelope of that organ, the deeper portions of which had, as has been described, escaped up into the walls of the abdomen. The wound finally healed, the penis up to the glans being adherent to the muscular structure of the part and covered with skin. The glans itself was left bare and movable, so that the patient can urinate with no trouble. Erections occur from time to time, but are attended with no pain, and the man is very unwilling to have any further operative measures undertaken.

W. A.

THERAPEUTIC NOTES.

Expectorant Potion.—

℞ Apomorphiæ chlorohydrat., ⅛ to ½ gr.;
Aq. destillat., ℥iii;
Acid. hydrochloric., gtt. v;
Syrupi simplicis, ℥i.—M.

Sig.—Tablespoonful every hour.—*Bull. Gén. de Thérap.*, October 30, 1874.

Intermittent Facial Neuralgia.—

℞ Quiniæ sulph.,
Tinct. aconit., āā gr. xx;
Pulv. quiniæ, q. s.—M.

Ft. in pil. no. xx.

Sig.—Three or four immediately on accession of the attack.

Calmative Expectorant.—

℞ Syr. acaciæ, f℥iv;
Antimonii oxysulphuret., gr. vi;
Ext. opii,
Ext. belladonnæ, āā gr. ii.—M.

Sig.—Tablespoonful every two or three hours in acute catarrhal bronchitis with fits of dry coughing.

PHILADELPHIA
MEDICAL TIMES.
A WEEKLY JOURNAL OF
MEDICAL AND SURGICAL SCIENCE.

The Philadelphia Medical Times is an independent journal, devoted to no ends or interests whatever but those common to all who cultivate the science of medicine. Its columns are open to all those who wish to express their views on any subject coming within its legitimate sphere.

We invite contributions, reports of cases, notes and queries, medical news, and whatever may tend to increase the value of our pages.

All communications must bear the name of the sender (whether the name is to be published or not), and should be addressed to Editor Philadelphia Medical Times, care of the Publishers.

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SATURDAY, JANUARY 2, 1875.

EDITORIAL.

BILLS.

IT is now the season when physicians, in corpora vili or by proxy, are engaged in making out their semi-yearly or yearly accounts; so that a few editorial comments upon professional bills may not be out of place. In this city, at least until within a few years, doctors only rendered their accounts once annually, but we trust there is not one of our readers who still cleaves to this time-honored but indefensible and injurious practice. There is no reason why doctors should wait for their money so much longer than do tradesmen. Moreover, a bill that might have been paid willingly when the memory of the recent peril and of the physician's skill and kindness was still fresh, is often paid very grudgingly when time has worn away the vividness of the impression. Again, no prudent man likes to have bills accumulating by the year unchecked; better at least once in six months to take an account of stock and square off indebtedness: therefore we believe most patients really prefer a semi-annual rendering of their accounts to an avalanche at the end of the year.

Undoubtedly, to most men it imparts more of a sense of strain to pay five hundred dollars in January than to pay two hundred and fifty at the end of each six months.

Among the lower classes very many bills are unquestionably lost by being allowed to accumulate, and we therefore note with pleasure that a few of our physicians are beginning to send to such patients monthly accounts.

There has recently been handed to us an old medical bill, stated to have originated in one of the small Jersey towns. We are assured that it is genuine, and the peculiarities of the paper, spelling, etc., bear testimony to the same effect. We print it below in contrast with a modern model, partly as a curious relic, and partly because we think that in some respects it is a more proper and just bill than are those at present usually rendered:

1752. Mr. Daniel Williams

		To Jno. Cox	Dr.
Nov.	6.	To your son John, a Nocturnal visit	0. 5.0
		Do. a Bleeding in the Arm	0. 1.6
		Do. a Bleeding in the Tongue	0. 1.6
"	7.	Do. a Purging Decoction	0. 3.6
		Eo. an Anodyne Discutient Plaister	0. 2.6
		Do. a Visit	
		Do. Six Antiphlogistick Powders	0. 12.0
"	10	Do. a Visit	0. 2.6
		Do. a Blistering Plaister	0. 2.6
"	12	Do. a Visit	0. 2.6
"	13	Do. a Visit	0. 2.6
		Do. Six Cathartick Powders	0. 12.0
		Do. an Anodyne and Discutient Plaister for his Throat	0. 2.9
			2. 13. 3

Jan. 24. Received the Contents of the above acct. in full.

JNO. COX.

Mr. William Daniels

To Dr. Jno. Smith Dr.

For professional services $200.00

Jan. 1, 1875.

Not long since, we heard a prominent physician say that he considered it a gross insult for a patient to ask him for a bill of items. It seems to us, however, that the only just and proper bill is one of items. Why should not the number of visits be specified? Has not the patient a right to know at what rate he is paying? Must a physician's account always remain an unknown and unknowable charge against the patient until it is rendered? The only possible object that can be gained by the physician is that sometimes he is able to charge at a rate which the patient might not willingly pay if he knew it. But is this just? Moreover, very often the patient believes that he is charged at a higher rate than he really is, forgetting how rapidly visits, when paid several times a day, mount up.

Some will say, "But a doctor is not a tradesman." True, but money is money, and business is business. True business principles are those principles which experience has evolved as being just in the

dealings of men with one another. The sooner the profession gives up all false notions of professional dignity and conducts its business relations with the people in a business-like manner, the sooner will those relations become satisfactory; and there is no principle more firmly established and more evidently just than the right of a man to know exactly what he is paying for, and at what rate.

We have always held it to be an absurdity for all doctors to charge at the same rate. Dr. Smith at thirty is not worth so much as he is at forty; and precisely as other professional men are paid,—variously, according to their reputations,—so ought doctors to be. The result of the present system is that at thirty the physician is almost starving; at fifty he is working like a galley-slave to save a little in order to pay his back debts and accumulate something for old age; whereas, if at thirty he charged two dollars per visit, and five dollars at fifty, at thirty he would have a comfortable living from the lighter cases of disease and from persons who could not afford the higher price, whilst at fifty, with no back debts to pay and something accumulated, he could live like a gentleman, earning a fair income by a reasonable amount of work. It is, however, not right to charge heavily without giving warning. Dentists in this city print upon their engagement cards, "Charges, ten dollars per hour:" shall we ever have the good fortune to see a doctor in Philadelphia bold enough and honored enough to print upon his bills, or write upon the face, "Charge, five dollars a visit"? A man may justly grumble at a very large charge which he has not expected, but no man has a right to grumble at any bill which he knowingly incurred.

BOGUS DIPLOMAS—MURDER.

FROM swindling to murder is but a few steps; especially when the swindling involves abetting those who are *nominally* swindled in becoming murderers. We suppose, therefore, none of our readers have been or will be surprised at the recent abortion so closely connected with a medical college owned and managed by the well-known and estimable Dr. Paine. Curiously enough, the abortion was produced at a house which has been the home of successive regular practitioners of excellent repute for very many years, until it passed into the hands of Mrs. Mixter and colleagues. The case, as far as made out, is briefly as follows. A young woman was brought, some few days since, from Conshohocken to this house, and an abortion produced by some one as yet unknown, from which she died last Wednesday (December 16). On Thursday the detectives in some way got wind of the affair, and by Friday had obtained such information that they called upon the worthy doctor already mentioned, and asked if he knew anything about a body recently brought to his college. With the blandest courtesy, the learned professor stated that he did not; but, on the twain going to the institution, the janitor informed them that a Dr. F. C. Perpente, or Dr. Dubois, as he is variously named, had brought one into the college the day before. The dissecting-room was next visited, and the body was found, not as yet injected or in any way injured, but showing, it is said, very decided traces of criminal abortion. Dr. Perpente was arrested at his office about midnight the same evening. On going to Mrs. Mixter's house, it was found vacated, the bird having suddenly flown, taking seemingly only clothing and money, leaving everything else in the house just as last used. Of course Prof. Paine denies that Dr. Dubois had any connection with the institution; but, unfortunately, his name appears upon the official printed card.

CORRESPONDENCE.

NEUROLOGICAL SOCIETY OF NEW YORK.

NEW YORK, December 9, 1874.

AT a recent meeting of the Neurological Society, Dr. F. D. Lente, of Cold Spring, N.Y., read an important and lengthy paper upon "The Neurotic Origin of Disease, and the Action of Remedies on the Nervous System," of which the following is a very brief abstract.

For some years past his own experience had impressed him with the belief that in most diseases, especially those of an acute character, the morbid impression is first made on the nervous system, either directly, as in the case of the mucous membrane, where the peripheral nerves are more accessible to the immediate action of toxic remedies, or *indirectly*, through the medium of the blood; that the remedies, therefore, most likely to exert an abortive effect on disease, or, where that is not attainable, the speediest and happiest relief, are those which are supposed to act especially on the nervous system; and that our ordinary treatment, by acting in a more indirect and therefore less speedy manner, as well as by disturbing other portions and other organs of the body not involved in the morbid process, is slower, less certain, and more unpleasant in producing these curative effects.

He classed among diseases of a neurotic character "malarious" fever, and especially the intermittent form. He had no theory as to the causation of malaria to offer, but, whatever the cause may be, it seemed to him to act primarily on the nervous system, and its morbid energy to be most expended in its assaults on that system. The

evidence advanced, both from the arguments and data of those adopting a certain theory of causation and of those virulently opposing it, alike tends to support this idea. Thus, it is admitted that repose, and especially repose at night, renders the body most liable to miasmatic influence, while exercise, even in what is supposed to be the hot-bed of poison, is preventive. Every one knows how much more liable we are to "take cold" when sleeping, or even when in a drowsy state, and especially at night, unless the body has an additional covering, and how great a protection exercise is. In both cases the nervous system is more impressible in the one state than in the other. Exercise and occupation in all epidemics of whatever kind are the great preventives. Indolence and fear, causing greater nervous impressibility, are our worst enemies. The sudden onset of the disease points to the primary affection of the nervous system.

He also instanced articular rheumatism as an example of a neurosis. Dr. J. R. Mitchell attempts to prove it a neurosis, and refers its phenomena to a spinal origin. In a case of pruritus reported in the first number of the *Archives of Dermatology*, by Dr. Beard, for Dr. Kinsman, of Ohio, the latter remarks, "The moment the current (of electricity) is passed along the spine the pruritus ceases." Dr. Beard also reports a case of herpes zoster frontalis for Dr. Bulkley, cured by galvanism. The spinal origin of many cutaneous affections is well established. It is important, in all cases of very obstinate eczematous or bullar diseases, to pay special attention to the influence of the nerve-centres and of possible nerve-lesions as a cause.

The peculiar effects of cathartics, especially where they are given for their so-called derivative action, can only be explained by this reflex influence on the brain and its vaso-motor vessels rather than by unloading the abdominal vessels, since the impression felt in the brain is almost instantaneous. This is felt sometimes even after an ordinary evacuation, or even after the passage of a gas.

Dr. Lente then proceeded to review the physiological effects of the more important remedies, among which he mentioned atropia, ergot, strychnia, opium, conium, physostigma or ergotine, iodine, calomel (in sedative doses), quinine, phosphorus, amyl nitrite, the bromides, the anæsthetics (by inhalation), digitalis, and electricity.

We cannot review these remedies in detail, but shall only reproduce a few of the author's thoughts here and there. He thinks that comparatively few physicians, taking the whole country, have any definite idea of the value of digitalis as a heart-tonic. The error has probably arisen from noting its effects on animals in toxic doses. In such doses "it lowers reflex action, and induces lassitude, prostration, muscular tremblings, and sometimes convulsions." It produces such an energetic action on the heart, if pushed too far, "that the ventricles become white as the last drop of blood is squeezed out of them." Finally, if pushed to its poisonous effect, the heart is arrested in systole (H. C. Wood).

In regard to the action of the bromides, there is one rather wide-spread error which tends greatly to circumscribe their usefulness, namely, that in cases of cerebral anæmia, or in a condition of the circulation in which it may be supposed that this exists, they are useless, and even injurious. Now, the result of experiments with these drugs on animals, carefully collected, as well as those of clinical experience, go towards demonstrating the fact that the least important of the effects of these agents is their vaso-motor influence; that their most important action is in controlling and, if pushed far enough, almost obliterating reflex action,—first, by a direct effect on the nerve-centres, the medulla oblongata, and the cord especially; secondly, on the peripheral nerves: that is, blunting the susceptibility of the latter to painful impressions, and also the susceptibility of the cord as to those impressions. This important virtue of the bromides is well exhibited in preventing sea-sickness and the vomiting induced by anæsthetics, and the unpleasant effects of opium and quinine, which clinical experience has recently taught us. This property has special applicability in the treatment of certain functional diseases of the heart.

As regards the use of the active neurotics, it is certain that most of the failures and disappointments often complained of have resulted from inefficient doses. We may give this as a rule of action, that the drug cannot be said to have had a fair trial unless it has relieved the symptoms or produced its toxic effects. With regard to the bromides, strychnia, opium, atropia, physostigma, this is especially the case; and in very dangerous cases the toxic effects need often to be very pronounced. The doses, in fact, are as various as the temperaments and idiosyncrasies of the patients. For an account of the employment of large doses of physostigma, reference was made to the last number of the *London Practitioner*. The patient, a physician, took, in four days, of the solid extract of a reliable manufacturer, sixteen, forty-eight, fifty-seven, and seventy-two grains at one time; serious paralysis was induced, but the urgency of the disease, tetanus, required a perseverance with the drug.

ODONTOLOGICAL SOCIETY OF NEW YORK.

To the Editor of the Philadelphia Medical Times:

DEAR SIR,—This body, comprising the representative men of the dental specialty of New York City, has just concluded a meeting of three days' duration, during which were presented and discussed a series of elaborate essays such as would be a credit to any professional body that might assemble in the country. At this meeting were collected as guests of the Society quite a number of the prominent teachers connected with the different dental colleges, together with gentlemen from different sections of the United States, most distinguished in the various departments of the specialty.

The subject of professional education and practice, which was discussed with unusual warmth, exhibited

markedly the inclination entertained for a wider sphere of work, and portrayed plainly enough that the conversion of the dentist into the oral surgeon is only a question of time.

The ranks of the common mother-profession would receive a valuable addition in such gentlemen as compose the New York Odontological Society, and we most cordially unite with a speaker from your own city in trusting that the day is not distant when all shall be children of one alma mater, working in harmony and with a mutual interest for the common good of suffering humanity. M. D.

PROCEEDINGS OF SOCIETIES.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

THE PRESIDENT, DR. WILLIAM PEPPER, in the chair.

THURSDAY, NOV. 12, 1874.

CANCER of the uterus.

Dr. JOHN H. PACKARD presented the specimen, derived from a woman aged 49, whose history has been published in the *American Journal of the Medical Sciences* for July, 1874, as "*A Case of Lumbar Colotomy for Obstruction of the Rectum by Cancerous Tumor of the Uterus.*" The object of the operation was the temporary relief from the obstruction, and by its means much comfort was secured to the patient while she lived, which was thirty-four weeks.

Dr. JOHN S. PARRY desired to know some further particulars of the case.

Dr. PACKARD said that when he first saw the patient her vagina was filled with a growth, and an examination of the uterus by the speculum was difficult, on account of the extreme vascularity of the mass distending the vagina. On introducing the finger into the rectum, it was arrested in a short time by a mass which appeared to block up the pelvis and make any further examination of the pelvic organs difficult. The operation of lumbar colotomy was performed, to relieve her from the effects of impaction of the fæces. He could not say whether the cancer originated from the pelvic organs or the vagina.

Dr. PARRY asked whether any growths were removed from the vagina.

Dr. PACKARD replied that there had not been any removed in this manner. He further said that the patient lived thirty-four weeks after the operation in comparative comfort, all the horrors of lumbar colotomy, as usually described, having been avoided. There was no odor about the patient, nor any difficulty in keeping her person clean.

Dr. PARRY said he had made a somewhat hasty examination of the specimen. Upon passing the finger up the vagina, which has not been opened, it felt perfectly healthy. The posterior portion of the cervix appeared to be absent; but he could not detect any destruction of tissue with the finger. The external os admits the finger, which may be carried as far as the internal os, where it meets with a constriction. Behind the uterus, between it and the rectum, there appears to be a tumor, which possesses some of the characters of an inflammatory deposit. If cancer of the uterus, it was different from any other he had ever seen. It reminded him of a specimen which had been presented at the Obstetrical Society, as cancer of the uterus, in which he had suspected an error of diagnosis, and in which careful dissection and microscopic examination proved that the condition was one of pelvic peritonitis.

Dr. PACKARD said he would be very glad to have the specimen referred to a committee for examination. He had spoken of it as cancer, because, in the first place, there was a distinct, readily-bleeding mass in the vagina, which made the examination difficult and rendered the use of the speculum impossible; in the second place, if there ever was a patient who exhibited the so-called cancerous cachexia, this certainly was such a one; finally, notwithstanding the relief to certain symptoms by the operation of lumbar colotomy, the disease swept on without any abatement, and the whole history of the case was that of one which runs its course without the possibility of any treatment materially influencing it.

Dr. JAMES TYSON rose to refer to a subject which had already been much discussed in the meetings of the Society,—that of cachexia. He said that it seemed to have been pretty well determined that the condition commonly called *cancerous cachexia* was one which was very often absent in cancerous disease, and which was sometimes observed when nothing like cancer was present to account for it; that while cancer only involved those organs which were not highly vital, *i.e.*, not closely essential to life, as is the case with many external organs, and perhaps some of the viscera, as the bladder, its presence did not result in the production of the so-called cachexia, while, when organs so important to life as the lungs or liver became involved, the phenomena sooner or later appeared. He inquired of Dr. John Ashhurst, Jr., who had always taken much interest in the subject, whether, consistently with these facts, this was not a case in which we would not have expected the cachexia to attend.

Dr. ASHHURST said that he thought that "cachexia" could no longer be considered an important symptom of cancer, it being well known that cases of *external* cancer might run their course to a fatal termination without any development of cachexia, while, on the other hand, this condition might occur in connection with visceral disease other than cancerous. He referred, in illustration, to a case reported by himself to the Society,* one of primary cancer of the bladder, in which the development of the so-called "cancerous cachexia" coincided with the occurrence of pulmonary disease, which, after death, was found to have been of a non-cancerous nature. The notion that any definite cachexia attended the growth of cancer should, he thought, be given up, and nothing but a careful microscopic examination allowed to determine as to whether any particular tumor was or was not of a cancerous character. In fact, since Virchow and other modern pathologists now described under the name of sarcomata many growths formerly regarded as cancerous, the diagnosis of these growths had come to be purely one of minute anatomy,—the *sarcomata* exhibiting cells in constant relation to an intercellular substance, but the *carcinomata* showing no such relation, while mixed growths were designated as *carcinomatous sarcomata*. If, however, the term *cancer* was used in a clinical sense, as merely equivalent to malignant tumor, it would, of course, include many growths besides the *carcinomata* of anatomical classification.

Dr. PARRY said that, in illustration of Dr. Ashhurst's remarks, he had under his care, at the Philadelphia Hospital, a case of cancer of the uterus, which had destroyed the whole of the anterior wall of the vagina and the posterior wall of the bladder, as well as involving the rectum and producing stricture of that organ. The patient had had profuse hemorrhages during the last few months, and yet there was no evidence of

*Trans. Path. Soc. Phila., vol. iv. p. 157.

cachexia. He had frequently seen cancerous disease run its course in organs not necessary to nutrition, without manifesting these phenomena. In the same ward with the woman whose case he had just related, was another, who came into the hospital with a huge pelvic abscess discharging into the vagina, and accompanied by profuse metrorrhagia. When he first saw her and heard her history, he thought her disease cancerous, and he was led to believe it on account of the cachectic appearance of her skin.

Dr. JOSEPH G. RICHARDSON said that, in connection with this case, he would mention that of a patient of his who died of primary cancer of the ovary, but who would never consent to an examination. As he visited her day after day, he observed, six weeks before her death, the condition formerly described as the "buckwheat-cake" hue, in a small spot just between the eyes. This patch gradually spread, and three weeks before her death the cachectic appearance was as well marked over the whole face as he had ever seen it in his life.

The specimen was referred to the Committee on Morbid Growths, which reported December 11, 1874, as follows:

"Your committee find the tumor presented by Dr. Packard distinctly alveolated, therefore carcinomatous. Long club-shaped cylinders filled with epithelial cells are seen permeating the muscular layers in every direction: hence the variety is *epithelial carcinoma* or cancroid.

"The same histological features are possessed by the rectal masses and those strewn throughout the body of the uterus and appendages. Greater part of the cervix has been destroyed; whether it or the rectum was the primary seat of the disease remains to be decided upon by the special committee."

Dr. PACKARD presented also a tumor of the thyroid gland, removed by him on the same morning from Mrs. M., æt. 42, who had suffered from it ever since the birth of her second child, nineteen years previously. Within the last year it had been increasing rapidly in bulk; she had suffered much annoyance every winter from it, as well as whenever she took cold or upon making any exertion. The operation was done at her earnest desire, and was in itself not difficult, although the hemorrhage was profuse immediately afterwards and required very prompt and energetic action. The tumor was presented in order that it might be referred to the Committee on Morbid Growths for examination.

(NOTE.—The patient progressed favorably until the seventh night, when there was slight bleeding from the effect of an irritative cough. Congestion of the lungs, which had been previously somewhat troublesome, now became extreme, and she died twenty-four hours subsequently.—P.)

The tumor was referred to the Committee on Morbid Growths, which reported Dec. 11, 1874, as follows:

"The tumor of the thyroid gland removed by Dr. Packard is an ordinary *struma hypertrophica*, with commencing colloid degeneration. The glandular follicles of the parenchymatous substance have evidently been undergoing active proliferation and segmentation, as shown by the budding-out of small glands from the walls of the larger parent follicles. Many of these follicles contain, besides their epithelial lining, a thick, amber-colored, gelatinous or colloid substance. The size of the distended follicles is very variable: in no place, however, have they coalesced so as to form large cystic cavities. The blood-vessels of the fibrous septa are very abundant and large, but the connective tissue itself is only developed in a very subordinate degree,—not sclerosed. In many places the net-work of vessels had a peculiar glassy appearance, their walls being unusually thick, and, upon the addition of iodine, yielding a distinct amyloid reaction. We have, therefore, a struma gelatinosa, with partial amyloid degeneration of the blood-vessels."

Myxomatous neurome of the brachial plexus.

Dr. R. M. BERTOLET presented this tumor, which was removed, Nov. 1, at the necropsy of a woman aged 67, who died from pulmonic phthisis. This growth, considerably larger than a fist, completely filling up the right axilla, never gave rise to any pain or decided inconvenience. It was several years in attaining its present size; the integument remaining freely movable over it, while its soft and fluctuating contents were suggestive of a cyst.

Upon dissecting out this fusiform growth, it was found that the nerve-sheaths formed a continuous covering over it, the nerve-bundles and individual fibres being widely separated and spread out over the tumor, and partially imbedded in it. When cut into, it presented a soft, trembling, gelatinous mass, yellowish-white in appearance; the more vascular portions having a reddish tinge and firmer consistence. In the fresh condition the substance of this tumor was not only soft and yellowish, but translucent; the alcohol has rendered it slightly opaque and more solid.

Microscopically, the growth is characterized, as can be seen in the accompanying slides and drawings, by large *stellate* and *spindle cells*, freely anastomosing with one another. These cells are imbedded in a structureless, hyaline basis-substance, which is rendered cloudy and granular upon the addition of acetic acid and other reagents. Septa of connective tissue are only sparsely developed. At points, large oil-globules are met with; at others, again, small round mucoid cells fill up the meshes; but the bulk of the growth presents the above pure type of myxoma.

Histologically, there can be no doubt that we have here a tissue analogous to embryonal connective tissue, which has sprung from the perineurium of the brachial plexus. It is not a neuroma in the true sense of the word, the term being admissible only in so far that it is indiscriminately applied to all neural tumors. Even the painful neuromatous growths so often occurring after amputations are generally mere fibromas, an actual new growth of the nerve-fibres themselves being exceedingly rare. Most of the spindle-shaped tumors found along the trunks of the nerve belong to the class of myxomas, as has been long ago pointed out by Virchow. When thus situated they are often multiple, and give rise to neuralgia and lancinating pains; yet they may fail to evoke any of these symptoms, as in this instance. Virchow mentions a case in which a painless myxomatous growth seated upon the peroneal nerve was mistaken and opened for a hygroma.

Myxomatous neuromas, like the myxomatous growths occurring in other portions of the body, are comparatively benign, with perhaps even still less tendency to metastasis. After the peripheral nerve-trunks, the next most frequent site for these neoplasms is the spinal cord; while in the brain and its meninges they are the exception, the pathological production of the cerebral neuroglia being the glioma.

Multiple myxoma of the spinal cord.

Dr. BERTOLET also presented these growths, which were discovered accidentally upon the cord of an adult of whom no clinical history seems ever to have been obtained. They are five in number, scattered along the length of the cord, both upon its anterior and posterior surfaces. The largest measures nearly half an inch in length, but only a few lines in thickness. The microscopic appearances do not differ materially from those of the preceding specimen.

The PRESIDENT asked what was the relation of the nerve-fibres to the tumor.

Dr. BERTOLET replied that the nerve-filaments were spread over the surface of the tumor first presented.

The PRESIDENT said that about a year ago he had the opportunity of studying carefully a myxoma removed from the right supra-spinous fossa. It was not nearly so large as this specimen, but presented the same microscopic characters.

The point of origin was not determined, but it was not connected with any twigs of nerves, but appeared to occupy a superficial position in the subcutaneous cellular tissues, being invested by a delicate fibro-cellular sheath.

The PRESIDENT remarked upon the presence of Dr. J. J. Woodward, of the army, who had been one of the original members of the Society and most active in its proceedings, and invited him to make any remarks which his large experience in the histology of morbid growths might suggest.

Dr. WOODWARD said that it would give him great pleasure to say something on the subject, if he thought he could add anything to what had been so well said by the members who had already spoken. He assented to the opinion that these growths are rare; certainly he had seen comparatively few of them. The only point not mentioned by previous speakers which it occurred to him to mention was the occasional association of myxoma with genuine carcinoma in the same growth. Not long since, he had examined such a tumor at the Army Medical Museum. It was from the parotid region, and for the most part consisted of typical myxomatous tissue, with beautiful stellate cells. A portion of the growth, however, had the anatomy of carcinoma, and presented a true alveolar structure, the alveoli being stuffed with masses of granular cells with large nuclei, which adhered together without any intercellular substance. Several of the microscopical sections preserved exhibited both these forms of morbid tissue in different portions of the same section.*

Perforation of vermiform process by ulceration, and resulting acute diffuse peritonitis.

Dr. W. H. WARDER presented the specimen, for Dr. EDWARD STONE, from W. B., æt. 24 years, married, temperate, and who had always enjoyed good health previous to his last illness. Dr. S. was called to see him on the evening of Oct. 24. He said that he had had "cramps" all day, for which the ordinary domestic remedies were taken,—ginger, brandy, etc.,—but without much relief. His bowels had been moved twice that day, and he had had nausea and some vomiting during the afternoon. He was suffering at the time of the visit from severe pain in the umbilical region, which came on in paroxysms every few minutes, and was not relieved by pressure, although the belly was not sensitive to pressure. Tongue slightly coated; pulse 80, rather small and weak.

Oct. 25, morning.—Considerable vomiting during the night. Pain has been relieved, but considerable tenderness has been developed generally over the abdomen, not sufficient, however, to prevent him from leaving his bed to go down-stairs. The soreness is most marked between epigastrium and umbilicus. No *tympanitis* whatever. Has no pain, excepting when turning in bed, and the position of lower extremities has no influence on it. Tongue heavily coated in the centre. Respirations hurried and somewhat superficial; pulse 98, small and weak, and considerable heat of skin.

Oct. 25, evening.—Vomiting has ceased. Although "he feels better," and is comfortable while lying still, he is much weaker. Pulse running 120, and very small and compressible, with marked heat of skin. Respiration entirely thoracic. No tympany, the belly looking natural as before. Lying on his back, with limbs extended. Bowels have not been opened since yesterday. Retention of urine; catheter was passed, and about a half-pint of urine withdrawn, normal in appearance.

During the night he sank rapidly, and died at 7 A.M. Oct. 26.

(After his death, Dr. Stone learned that he had been ailing and had had "pain in his stomach" for several days before he saw him.)

Autopsy, twenty-six hours after death.—*Abdomen* only examined. Rigor mortis well marked. Abdomen flat. Signs of violent acute peritonitis, involving the whole sac. *Omentum* swollen and injected, and glued down by recent adhesions to surrounding viscera. *Intestines* congested and matted together, covered here and there with patches of soft yellow lymph. In right iliac fossa, the caput coli and lower portion of ileum were more firmly adherent, and were thickly covered with lymph. The vermiform appendix was firmly adherent to an adjacent coil of intestine by its extremity, and was about the diameter of the index-finger, patulous, and full of semi-fluid fæces. Near its base a small ulcer was found to have perforated the bowel. The mucous membrane of the intestinal canal elsewhere was not ulcerated. No foreign substance was found, and the fæces in the colon were healthy. Peritoneal cavity contained about one-half pint of sero-purulent fluid.

The PRESIDENT said these cases were of interest and importance, in consequence of their being much more frequent than is usually acknowledged, on account of their fatality and the obscurity of their diagnostic symptoms. In this unfortunate case one would suppose from the size of the appendix that there had been latent disease of a chronic inflammatory character, so that the true period of beginning of the typhlitis was not observed, while the disease was rapidly going on to perforation. Indeed, typical symptoms can scarcely be said to have manifested themselves. The case was also of interest from the fact that there appeared to be no foreign body or hardened secretion of mucus occupying the appendix, as is usually the case, though, from the fact that there was still free communication between the appendix and the cæcum, such a body may have existed and have escaped into the large intestine.

In answer to a question by Dr. HARRISON ALLEN, the President further said that in his own observation the position of the ulcer had seemed to be a matter of indifference. He had seen it occupy the extremity of the appendix, and all intermediate points between this and the cæcum. He had seen from two to four ulcers with two perforations. The ulcers often arise in connection with some distinct irritating particle which is at times attached at the site of the perforation, and seems to have been the determining cause of the ulcer at that point. In cases where the opening between the appendix and the bowel is closed by adhesions, the cavity of the appendix is apt to be greatly distended by the accumulation of pus. In cases where the communication with the cæcum is retained, the irritating foreign body may escape from its position into the large intestine, and thus be overlooked. But it would seem that usually the seat of the ulcer was quite accidental, perhaps depending in many cases on the position where the foreign body lay in contact with the mucous membrane. In cases of typhlitis which result from other causes than the presence of irritating foreign bodies, whether of inspissated mucus or fæces, or bodies more strictly foreign, such as fruit-seeds, the appendix itself is not so apt to be the seat of the disease as the walls of the cæcum, and the attack is apt to assume rather a different form.

* Dr. Woodward subsequently informed the Recorder that the tumor referred to is No. 6320, Surgical Section, Army Medical Museum. It was from the right cheek of a lady about 55 years old, and occupied the site of the parotid gland, which was apparently atrophied. It was excised November 10, 1873. Nos. 6459 to 6470, Microscopical Section, Army Medical Museum, are thin sections of this tumor, stained with carmine and mounted in Canada balsam.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

W. S. W. RUSCHENBERGER, M.D., in the chair.

WEDNESDAY EVENING, NOVEMBER 4, 1874.

DR. WILLIAM S. FORBES read a paper on "A New Operation for Certain Cases of Cleft Palate and Bifid Uvula."

The new operation is adapted to cases in which each half of the split uvula and velum is large and thick, and in which the cleft does not extend entirely through the velum up to the hard palate.

It consists in making an incision from a little below the middle of the right half of the uvula, on one side, and carrying the bistoury up to a point above the arch of the fissure, and then, turning the bistoury, to bring it down to a corresponding point in the uvula of the opposite side.

The column of flesh on either side of the fissure, now liberated by this incision, turns on its attached pedicle, or falls from the arch, leaving a long uvula with an oval opening in its base.

In the first case, a few days after the operation granulations sprang up, and the parts contracted. A day or two later, when the upper part of the wound began to widen, the tensor and levator palati muscles were divided with a double-edged knife, as recommended by Sir W. Fergusson, all tension being thus removed. The upper edges of the opening then approached the median line; and, under the application of a little nitrate of silver, cicatrization and narrowing of the entire opening rapidly ensued.

This case eventuated in a cure, as did also a second one in which a similar operative procedure was practised.

Dr. JOHN ASHHURST read a report of a *fracture of the neck of the scapula* which occurred in a boy five years old, who had been struck by a falling door, in front of the right ear and on the right shoulder. When he saw the case, on the third day, there was a good deal of pain and tenderness, with moderate swelling, but very little deformity. Careful examination showed that there was no fracture of either the humerus or the clavicle, nor of either the acromion or the coracoid process; but the latter appeared to move with the head of the humerus, and, by grasping the neck of the scapula between the fingers laid upon the shoulder and the thumb thrust firmly into the axilla, deep-seated crepitus was elicited upon the arm being forcibly rotated. The treatment consisted in maintaining the arm in the "Velpeau position" by means of broad adhesive strips and a bandage, and a satisfactory cure was effected in the course of four weeks.

GLEANINGS FROM OUR EXCHANGES.

THE STATE OF THE PUPIL IN CHLOROFORM-ANÆSTHESIA AS AN INDICATION OF DANGER (*Atlanta Medical and Surgical Journal*, November, 1874).—M. Budin, interne of the hospitals, in examining with care all the details of chloroformization, with the end of discovering some sign which may guide the surgeon in its administration, has observed that there exists a certain relation between the state of the pupils and the more or less profound anæsthesia of the subject. . . .

1. There exists in the surgical anæsthesia produced by chloroform a constant relation between the state of the pupil and the period of anæsthesia.

2. During the period of excitation the pupil is dilated.

3. This period passed, the pupil contracts; its atresia, very marked for several minutes, accompanies, in general, complete anæsthesia.

4. Dilatation of the pupil supervening during an operation indicates in general that anæsthesia is less profound, and that return to sensation is near.

5. The state of the pupil may then serve as a guide in the administration of chloroform.

6. During operations of long duration, if the patient is to be kept completely insensible and immobile, the pupils must be kept constantly contracted.

7. Finally, efforts at vomiting may produce dilatation of the pupils, dissipate the insensibility, and awaken the patient; they annihilate in part the effects of anæsthesia.—*Progrès Médical—Gazette des Hôpitaux*, October 1, 1874.

FRACTURE OF THE STYLOID PROCESS OF THE ULNA (*Edinburgh Medical Journal*, November, 1874).—Mr. Neil Macleod reports the case of a man, æt. 32, who disabled his right hand in a fight, by a blow on his antagonist's face. He presented himself for treatment, complaining of pain near the wrist, and inability to use the hand. The fore-arm was between pronation and supination, and the disabled hand was supported on the other. On comparing with the other hand, there was no antero-posterior or lateral displacement, but there was slight ulnar flexion. On fixing *both* bones of the fore-arm, and moving the hand and wrist, no crepitus could be elicited. The same result followed fixation of the *radius alone;* but in fixing the *ulna alone*, a little above the styloid process, distinct crepitus was obtained on moving the hand and wrist antero-posteriorly. Further, no crepitus could be obtained by manipulation of the lower end of the ulna alone; but on fixing the wrist and lower end of the radius with one hand, with the other the distal end of the ulna could be pushed from its normal position forwards or backwards —more especially the latter.

Diagnosis.—Fracture of the styloid process of the ulna, and separation of the triangular cartilage.

INFECTION BY SYPHILITIC SEMEN (*New York Medical Journal*, November, 1874).—Dr. Isaac Smith, Jr., reports the following case, which he believes disproves the assertion of Professor Bumstead that it has never been proved that a female may, without becoming pregnant, contract syphilis through the semen of a syphilitic male, he having at the time no syphilitic lesion. A gentleman who had had chancre, secondary eruption, bubo, and engorgement and suppuration of the cervical glands, married after he had apparently been in good health for about twelve months. Soon after, his wife had prolapsus uteri, and a chancre was discovered upon the os. This was treated, and healed kindly. Six weeks later she had a specific fever, and as that subsided, a secondary eruption appeared, which soon yielded to treatment. Six months afterwards, the man had urethral chancre, while his wife was suffering at the same time from engorgement of the os uteri, with uterine leucorrhœa. They were relieved of these troubles, and since then have had perfect health. The woman has never been pregnant, and has never run past her time. The family is of the highest respectability.

EXTRA-UTERINE PREGNANCY (*The Boston Medical and Surgical Journal*, November 12, 1874).—Dr. E. W. Sawyer reports the case of a married woman, who had had five children, and in whom all the usual symptoms of pregnancy came on, and persisted until the third month, when colicky pains began to trouble her and continued throughout her gestation.

At the end of the ninth month regular labor-pains were developed, but subsided after two days. The head of the child could be felt high up in the pelvis; there

was no dilatation of the os uteri. Twelve days later, regular pains set in, and continued for a day, at the end of which all motion ceased, after a most violent action of the child. She then had slight hemorrhage for three months, but for some time afterwards her menses returned with the strictest regularity. It being decided to operate, an incision was made through the abdominal walls, and the cyst containing the child was removed. The patient did not rally, but died twenty hours after the operation.

MISCELLANY.

A NEW THERMOMETER.—A. Jaksch, of Kreibitz, Bohemia, proposes the use of glycerin thermometers, made as follows: An ounce bottle is two-thirds filled with glycerin of any desired color, and the bottle placed in a freezing-mixture of sal ammoniac, saltpetre, and water, so as to cool the liquid to 32° F. A glass tube twelve to fifteen inches long is passed through a good-fitting cork, so as to dip nearly an inch into the glycerin. The cork is inserted in the neck of the bottle and rendered air-tight with sealing-wax or a cement of varnish and chalk, and the thermometer is then ready to be graduated. On inserting the cork, the liquid rises in the tube a few inches.

The bottle is placed in melting ice, and the level of the liquid marked 32°, if the scale is to be Fahrenheit's. It is next placed in warm water, say at 132°, and this point marked. The space between these points is divided into one hundred equal parts, and this division carried down to the Fahrenheit zero, and upward to the top of the tube.

DECLINE OF HOMŒOPATHY ABROAD.—"It is not to be wondered at that we now obtain few open accessions to our ranks; that the vacancies occasioned by deaths are scarcely filled up by new converts. Apparently homœopathy is almost at a stand-still as regards professed adherents in this country. The 'Homœopathic Directory' of this year contains few new names of practitioners that were not in the 'Directory' of last year. Nor is it surprising that we have renegades. . . .

"The paucity of recent conversions to homœopathy in other countries of Europe has been admitted and commented on by the homœopathic periodicals, and is, I think, satisfactorily accounted for by what I have stated."—*Dr. Dudgeon's Presidential Address at the British Homœopathic Congress*, June 4, 1874.

VIOLATION OF THE PHARMACY LAW.—Three retail druggists were recently fined one hundred dollars and costs for violation of the act of Assembly which provides that no person shall carry on in this city the business of retailing drugs, chemicals, or poisons, or of putting up physicians' prescriptions, without first obtaining a certificate of competency from a Board known as the Pharmaceutical Examining Board, composed of competent druggists, and appointed by the Mayor.

IT will surprise many members of the profession in this country to be told that elephantiasis græcorum exists in Canada. According to the *Toronto Globe*, there cannot be any doubt but that in a part of the Dominion near the mouth of the Miramichi River there have been lepers for the last eighty or ninety years.—*The American Medical World.*

THE death is announced of Dr. Edward Smith, of London, well known to the profession by his papers on food, alcohol, phthisis, prison-diet, etc., etc.

NOTES AND QUERIES.

REMARKABLE CASE OF MEGACEPHALUS—RECOVERY.

TO THE EDITOR OF THE PHILADELPHIA MEDICAL TIMES:

DEAR SIR,—I was hastily summoned on the morning of the 27th to see Mr. J., æt. 40. He had been to a Thanksgiving dinner the day before, and to his club in the evening, and never felt better.

Symptoms.—Face flushed, headache intense, intellect obtuse, tongue furred and swollen, speech thick, skin hot and dry, odor frumentous and nicotic, pulse 90, temperature 102°, eyes looked so bad that I thought it best to send for the oculist, Dr. N. Found diplopia, muscæ, V $\frac{18}{20}$, media clear, no choking of disk, fundus normal.

℞ Pil. hydrarg., gr. x, at once;
Sp. mindereri, f℥ss, q. h. s.

Evening.—Headache somewhat better, but worse in other respects; pulse 95, temperature 100°. Spasmodic jerking, slight delirium, much tremor. Consult with Dr. M. (nervous disease) at 9 P.M. No paralysis; sensibility normal; areas all right, as tested by the prickers. Patient's vision had improved $\frac{20}{20}$; saw a joke: said he thought he was getting stuck.

℞ Galvanism, t. d.
Magnesii sulph., ℥iss at a dose.

28th.—Much better. Pulse 75, temperature 98°. Bowels have been moved freely. Urine free, but cloudy. Sent a bottle of it to Dr. T. (renal specialist). Warm bath and chicken broth. Suspended galvanism.

29th.—Recovering rapidly. Discontinued treatment.

Met patient on Broadway not long after this; said he had got the bills, and looked very savage. Thought he was going to have another attack, and advised him to go to Europe. Said I had a young medical friend who would accompany him for expenses and a small consideration.

He said he thought I did not look very well myself, and told me to go somewhere—I don't know where the place is exactly, but remember thinking it was very hot, and how ignorant non-medical men are of climate and geography.

D. F. L.

NEW YORK, December, 1874.

AT the Annual Meeting of the New York Society of Neurology and Electrology, held Dec. 21, the following officers were elected for the ensuing year: *President*, Meredith Clymer, M.D.; *Vice-President*, John C. Dalton, M.D.; *Councillors*, Austin Flint, Jr., M.D., D. B. St. John Roosa, M.D., Edward G. Loring, Jr., M.D., William H. Draper, M.D., William T. Lusk, M.D.; *Corresponding Secretary*, John J. Mason, M.D.; *Recording Secretary and Treasurer*, N. B. Emerson, M.D.; *Curator*, Edward G. Janeway, M.D.

Attest: ALFRED L. CARROLL, M.D., *Secretary.*

PHILADELPHIA COUNTY MEDICAL SOCIETY.

DR. D. Hayes Agnew, late President, will deliver the Annual Address before the Society, Wednesday, January 6, 1875, at 8 o'clock P.M., at the Hall of the College of Physicians.

The medical profession in Philadelphia are cordially invited.

OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U.S. ARMY, FROM DECEMBER 22 TO DECEMBER 28, 1874, INCLUSIVE.

WINNE, C. K., ASSISTANT-SURGEON.—Assigned to duty at Sidney Barracks, Nebraska. S. O. 185, Department of the Platte, Dec. 17, 1874.

ABADIE, E. H., SURGEON.—Died at St. Louis, Missouri, December 22, 1874.